

# HPE Digital Learner Integrating Veeam Content Pack

<b>HPE Content Pack number</b>	CP037
<b>Content Pack length</b>	20 Hours
<b>Content Pack category</b>	Category 1
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## Why HPE Education Services?

- IDC MarketScape leader 5 years running for IT education and training\*
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The Integrating Veeam with HPE 3PAR, Nimble and StoreOnce course covers Veeam backup and replication software in context of integrations with HPE 3PAR, Nimble and StoreOnce products. It includes an introduction / review of Veeam, HPE 3PAR, Nimble, and StoreOnce concepts that are important to know before working with Veeam integrations with HPE products. It also covers theory and features available in Veeam when combined with HPE products, including NAS and Catalyst integration, local and remote copy integrations, backup and recovery flow, verification and best practices. The course includes hands-on labs using Veeam with HPE 3PAR and Nimble storage arrays and StoreOnce backup appliances.

Integrating Veeam with HPE 3PAR, Nimble and StoreOnce Self-Paced Training has three components:

- Web-based training, available online.
- Hands-on labs, via a physical environment available through the HPE vLabs.
- Hands-on labs, via a virtual environment available through the HPE vLabs.

You will enjoy access to this self-paced, web-based training for one year from your purchase date. The content of this training is identical to the instructor-led version of this course. During this time, you can repeat sections of the training for reinforcement at your own pace and on your own schedule.

You have 60 sequential days of access to the HPE vLabs virtual environment which includes HPE Nimble arrays and StoreOnce appliances to run the labs associated with this course. In addition to having 60-days access to this virtual lab, you will be provided access to a vLabs physical environment for two (2) days. The physical environment includes HPE 3PAR arrays, Nimble arrays, and StoreOnce appliances.

## Audience

- Customers, HPE Services field, engineers, call center personnel, presales and channel partners, and other field personnel who provide installation and/or operational support assistance

## Prerequisites

Before attending this course, students must have:

Basic VMware® vSphere® administration experience

Basic understanding of iSCSI, fibre channel, backup, and SAN technologies

Basic Veeam, 3PAR, Nimble, and StoreOnce knowledge

## Content Pack Objectives

After completing this content pack, students will be able to:

- Describe the core components of Veeam
- List Veeam backup and recovery capabilities
- Describe local and remote replication features of 3PAR and Nimble storage arrays
- Talk about Veeam integrations with HPE storage arrays (3PAR and Nimble), including advantages
- Describe important StoreOnce product concepts and capabilities
- Explain the importance and advantages of deduplication
- Plan, configure and perform Veeam backup and recovery by using HPE storage and backup products
- Configure backup replication

## Detailed course outline

### Module 1: Veeam Introduction and Review

#### Veeam Introduction/Review

- 1.1 Core components
  - Backup Proxy
    - Backup server
    - Backup repository
- 1.2. Transport modes
  - Direct storage access
  - Virtual appliance mode
  - Network mode
- 1.3. Backup modes
  - 1.4. Backup methods
  - 1.5. Changed block tracking
  - 1.6. Basic configuration
  - 1.7. Backup and backup copy job
  - 1.8. Replication
  - 1.9. Recovery Verification
  - 1.10. Verification
  - 1.11. On-demand sandbox

### Module 2: HPE Storage Review

#### HPE Storage Review

- 2.1. Local replication
- 2.2 3PAR snapshot
- 2.3 3PAR clone
- 2.4 Nimble SmartSnap
- 2.5 Nimble SmartCopies
- 2.6 Nimble snapshot
- 2.7 Snapshot life cycle
- 2.8 Volume collections and schedules
- 2.9 Nimble Zero Copy Clones
- 2.10 Recovery scenarios using local replication

### Module 3: HPE Storage Review – Remote Replication

- 3.1. Remote replication
- 3.2. 3PAR Remote Copy
  - FC-based Remote Copy
  - Native IP-based Remote Copy
  - Remote Copy terminology
  - Replication modes
  - Remote Copy topologies
  - Failure scenarios
- 3.3. Nimble remote replication
  - Replication topologies
  - Replication components
  - Snapshot replication schedule (based on volume collection)
  - Replication QOS—bandwidth limit
  - How replication works—the basics
  - Volume collection schedules—more information
  - General DR operations

### Module 4: HPE Storage Integrations Configuration and Features

- 4.1. HPE storage integration
- 4.2. Common VADP agentless backup process (vStorage API—Data Protection)
- 4.3. Storage integration—standard backup
- 4.4. Overhead of standard VMFS snapshots
- 4.5. Veeam integration with HPE primary storage
- 4.6. Use of storage snapshots for better RPO
- 4.7. Veeam backup job from HPE primary storage snapshots
- 4.8. Storage integration—backup with Veeam snapshot integration
- 4.9. Benefit of using hardware snapshots
- 4.10. VMware VM-snapshot challenges
- 4.11. Storage integration versus traditional approach summary
- 4.12. Veeam direct connectivity to HPE primary storage
- 4.13. HPE storage integration
- 4.14. Backup from HPE storage snapshots
- 4.15. 3PAR snapshot orchestration
- 4.16. Backup from a peer 3PAR storage snapshot
- 4.17. Nimble snapshot orchestration and replication over WAN
- 4.18. Backup from Nimble snapshots on the secondary array
- 4.19. How to configure snapshot-only jobs
- 4.20. Configuring snapshot and backup file in a single job
- 4.21. Veeam Explorer, IVMR, Sure-Backup from HPE storage snap
- 4.22. Instant VM recovery from HPE storage snapshot
- 4.23. Veeam On-Demand Sandbox/DataLabs from HPE storage snapshot
- 4.24. Veeam Explorer for storage snapshots
- 4.25. Restore application items from storage snapshots
- 4.26. Recovery Manager Central enhancements
- 4.27. Backup policy including storage snapshots
- 4.28. Veeam supports 3PAR and Nimble VVOLs for vSphere

**Module 5: HPE StoreOnce Introduction and Review**

- 5.1. Basics
- 5.2. VTL
- 5.3. NAS
- 5.4. Catalyst
- 5.5. Deduplication
- 5.6. Replication
- 5.7. Catalyst copy

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**Module 6: Veeam and HPE StoreOnce Integration**

- 6.1. Veeam and StoreOnce integration components
  - 6.2. HPE StoreOnce – Veeam basics
  - 6.3. HPE StoreOnce deployment
  - 6.4. HPE StoreOnce and Veeam with NAS integration
  - 6.5. HPE StoreOnce and Veeam—CIFS topologies
  - 6.6. HPE StoreOnce and Veeam—Catalyst topologies
  - 6.7. Suggested architectural design
    - Direct backup to StoreOnce Catalyst Store
    - Supports Virtual Synthetic Full
    - Supports IVMR and SureBackup
    - Does not require additional storage and workload
    - Catalyst stores are not exposed to virus activities
    - HPE StoreOnce has enhanced data integrity features
  - 6.8. Support for deduplicating storage systems
  - 6.9. HPE StoreOnce and Veeam—additional features and zero complexity
  - 6.10. Benefit of StoreOnce deduplication for Veeam repositories
  - 6.11. Multi-streamed write (per VM backup file)
  - 6.12. StoreOnce—deduplication across VMs and jobs
  - 6.13. Virtual Synthetic Full—fast full backup with Catalyst
  - 6.14. Instant VM recovery and HPE StoreOnce
  - 6.15. SureBackup and StoreOnce
  - 6.16. Ransomware and data protection (backup)
  - 6.17. Immunize your backup repository against virus
  - 6.18. Backup replication
  - 6.19. Veeam backup replication
    - Option #1—Catalyst-powered Veeam backup replication
    - Option #2—traditional Veeam backup replication process
  - 6.20. Veeam and Catalyst over WAN
  - 6.21. Summary
  - 6.22. Data migration from any legacy storage to StoreOnce
  - 6.23. Veeam and StoreOnce best practices summary
  - 6.24. Veeam supported and unsupported features
  - 6.25. HPE and Veeam integration summary
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## Detailed lab outline

### Lab 0: Accessing the vLabs Environment

#### Lab 1: Initial Nimble Storage Preparation

- Provision and present storage on Nimble array
- Connect volume to ESXi, create a new datastore and migrate VMs to it via vSphere Web Client

#### Lab 2: Nimble Remote Replication Preparation

- Configure a (remote) replication between Nimble arrays

#### Lab 3: Nimble—Setup Veeam with VMware and HPE Nimble integration

- Log on to Veeam backup software
- Configure Veeam for backups of the VMware environment
- Configure Veeam integration with the HPE Nimble Storage array

#### Lab 4: Creating Backups Using Veeam and Nimble

- Create a backup configuration for VMware vSphere by using an array-based snapshot
- Check the status of a volume and a snapshot on the array
- Back up a virtual machine (VM) by using array snapshots

#### Lab 5: Virtual Machine Instant Recovery with Nimble

- Check the status of the volumes on an HPE Nimble array
- Verify the configuration of VMware vSphere
- Start an instant recovery process to recover a virtual machine (VM)
- Check the status of an array clone created for recovery
- Verify the configuration of a vSphere clone used for recovery
- Start a migration of application data to the production volume

#### Lab 6: Granular File Level Restore with Nimble

- Make a granular file level restore

#### Lab 7: Backing Up from a Secondary Nimble sStorage

- Add a target Nimble array
- Create a backup from a storage replica job
- Configure a replicated Nimble volume collection
- Run a new backup job
- Verify backup from storage replica with File Level Recovery

#### Lab 8: Initial 3PAR Storage Preparation

- Verify SSMC status
- Provision and present storage on 3PAR array
- Connect volume to ESXi, create a new datastore and migrate VMs to it via vSphere Web Client

#### Lab 9: 3PAR Remote Replication Preparation

- Configure a Remote Copy Group between 3PAR arrays

#### Lab 10: Initial Veeam Preparation

- Configure Veeam integration with the HPE 3PAR Storage array

#### Lab 11: Creating Backups Using Veeam and 3PAR

- Create a backup configuration for VMware vSphere by using an array-based snapshot
- Add FC backup proxy host to 3PAR
- Check the status of a volume and a snapshot on Veeam and the array
- Back up a virtual machine (VM) by using array snapshots

#### Lab 12: Virtual Machine Instant Recovery with 3PAR

- Check the status of the volumes on an HPE 3PAR array
- Verify the configuration of VMware vSphere
- Start an instant recovery process to recover a virtual machine (VM)
- Check the status of an array snapshot created for recovery
- Verify the configuration of a vSphere clone used for recovery
- Start a migration of application data to the production volume

#### Lab 13: Granular File Level Restore with 3PAR

- Make a granular file level restore

**Lab 14: Creating Backups Using Veeam and 3PAR**

- Add a target 3PAR array
- Create a backup from storage replica job
- Run a new backup job
- Verify backup from storage replica with file level recovery

**Lab 15: Setup StoreOnce and Veeam**

- Create a new Catalyst store on StoreOnce
- Create a Veeam backup repository
- Create a Veeam backup job

**Lab 16: Dedup and Virtual Synthetic Backup**

- Run a backup without source side dedup
- Run a backup with source side dedup
- Run a virtual synthetic full backup

**Lab 17: VM and SQL Item Restore from StoreOnce**

- Restore an entire VM
- Recover an SQL item

**Lab 18: Backup Copy**

- Create a new Catalyst store on a remote StoreOnce
  - Create a Veeam backup copy job
  - Create a Veeam backup repository based on a remote StoreOnce
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## Virtual Lab Guide for Nimble storage

### Lab 0: Accessing the vLabs Environment

#### Lab 1: Initial Storage Preparation

- Provision and present storage on Nimble array
- Connect volume to ESXi, create a new datastore and migrate VMs to it via vSphere Web Client

#### Lab 2: Remote Replication Preparation

- Configure a (remote) replication between Nimble arrays

#### Lab 3: Initial Veeam Preparation

- Log on to Veeam backup software
- Configure Veeam for backups of the VMware environment
- Configure Veeam integration with the HPE Nimble Storage array

#### Lab 4: Creating Backups Using Veeam

- Create a backup configuration for VMware vSphere by using an array-based snapshot
- Check the status of a volume and a snapshot on the array
- Back up a virtual machine (VM) by using array snapshots

#### Lab 5: Virtual Machine Instant Recovery

- Check the status of the volumes on an HPE Nimble array
- Verify the configuration of VMware vSphere
- Start an instant recovery process to recover a virtual machine (VM)
- Check the status of an array clone created for recovery
- Verify the configuration of a vSphere clone used for recovery
- Start a migration of application data to the production volume

#### Lab 6: Granular File Level Restore

- Make a granular file level restore

#### Lab 7: Backing Up from a Secondary Storage

- Add a target Nimble array
- Create a backup from storage replica job
- Configure a replicated Nimble volume collection
- Run a new backup job
- Verify backup from storage replica with file level recovery.

#### Lab 8: Setup StoreOnce and Veeam

- Create a new Catalyst store on StoreOnce
- Create a Veeam backup repository
- Create a Veeam backup job

#### Lab 9: Dedup and Virtual Synthetic Backup

- Run a backup without source side dedup
- Run a backup with source side dedup
- Run a virtual synthetic full backup

#### Lab 10: VM and SQL Item Restore from StoreOnce

- Restore an entire VM
- Recover an SQL item

#### Lab 11: Backup Copy

- Create a new Catalyst store on a remote StoreOnce
- Create a Veeam backup repository based on a remote StoreOnce
- Create a Veeam backup copy job

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